CLAIMS

1. A driving system control device (2000) in a vehicle integrated control system (100) organized in a hierarchical configuration such that operation is performed in a direction from an upper control hierarchy including a request of a driver to a lower control hierarchy including an actuator, said actuator operating a driving source and a transmission mechanism of a vehicle,

said driving system control device (2000) comprising:

a requested output calculation unit (2010) calculating a requested output for said driving source;

a target gear ratio determination unit (2020) calculating a target gear ratio in said transmission mechanism;

a transmission control unit (3100) controlling said transmission mechanism; and

a generated torque calculation unit (2040) calculating driving torque generated in said vehicle.

2. The driving system control device according to claim 1, wherein said driving system control device (2000) further comprises an availability calculation unit calculating availability of torque generated in said driving source and outputting the availability to the upper control hierarchy.

3. The driving system control device according to claim 1, wherein said requested output calculation unit (2010) includes a transfer efficiency compensation unit compensating transfer efficiency.

4. The driving system control device according to claim 1, wherein said generated torque calculation unit (2040) includes a transfer efficiency compensation unit compensating transfer efficiency.

5. The driving system control device according to claim 1, wherein said transmission mechanism includes a torque converter, and said requested output calculation unit (2010) performs inverse operation of torque to be generated in said driving source from the requested driving torque, using a torque converter inverse model.

6. The driving system control device according to claim 5, wherein said torque converter inverse model compensates response with respect to a motive power transfer system that is represented by first-order lag and dead time.

7. The driving system control device according to claim 1, wherein said transmission mechanism includes a torque converter, and said requested output calculation unit (2010) uses a torque converter inverse model to perform inverse operation of the number of rotations to be caused in said driving source from a torque converter output rotation number that is calculated from a vehicle speed or a driving system output rotation number.

8. The driving system control device according to claim 7, wherein said torque converter inverse model compensates response with respect to a motive power transfer system that is represented by first-order lag and dead time.

9. The driving system control device according to claim 1, wherein said requested output calculation unit (2010) calculates the requested output taking account of an influence of disturbance due to an auxiliary device of the vehicle that is a load of said driving source.

10. The driving system control device according to claim 1, wherein said

generated torque calculation unit (2040) calculates the generated torque taking account of an influence of disturbance due to an auxiliary device of the vehicle that is a load of said driving source.

11. The driving system control device according to claim 1, wherein said requested output calculation unit (2010) calculates information for controlling at least two manipulation amounts, differing in response, to control said driving source.

12. The driving system control device according to any of claims 1-11, wherein said driving source is at least one of an engine and a driving motor.

13. A driving system control device (2000) in a vehicle integrated control system (100) organized in a hierarchical configuration such that operation is performed in a direction from an upper control hierarchy including a request of a driver to a lower control hierarchy including an actuator, said actuator operating a driving source and a transmission mechanism of a vehicle,

said driving system control device (2000) comprising:

requested output calculation means (2010) for calculating a requested output for said driving source;

target gear ratio determination means (2020) for calculating a target gear ratio in said transmission mechanism;

transmission control means (3100) for controlling said transmission mechanism; and

generated torque calculation means (2040) for calculating driving torque generated in said vehicle.

14. The driving system control device according to claim 13, wherein said driving system control device (2000) further comprises availability calculation means for

calculating availability of torque generated in said driving source and outputting the availability to the upper control hierarchy.

15. The driving system control device according to claim 13, wherein said requested output calculation means (2010) includes transfer efficiency compensation means for compensating transfer efficiency.

16. The driving system control device according to claim 13, wherein said generated torque calculation means (2040) includes transfer efficiency compensation means for compensating transfer efficiency.

17. The driving system control device according to claim 13, wherein said transmission mechanism includes a torque converter, and said requested output calculation means (2010) includes means for performing inverse operation of torque to be generated in said driving source from the requested driving torque using a torque converter inverse model.

18. The driving system control device according to claim 17, wherein said torque converter inverse model includes means for compensating response with respect to a motive power transfer system that is represented by first-order lag and dead time.

19. The driving system control device according to claim 13, wherein said transmission mechanism includes a torque converter, and said requested output calculation means (2010) includes means for performing inverse operation of the number of rotations to be caused in said driving source from a torque converter output rotation number that is calculated from a vehicle speed or a driving system output rotation number, using a torque converter inverse model.

20. The driving system control device according to claim 19, wherein said torque converter inverse model includes means for compensating response with respect to a motive power transfer system that is represented by first-order lag and dead time.

21. The driving system control device according to claim 13, wherein said requested output calculation means (2010) includes means for calculating the requested output taking account of an influence of disturbance due to an auxiliary device of the vehicle that is a load of said driving source.

22. The driving system control device according to claim 13, wherein said generated torque calculation means (2040) includes means for calculating the generated torque taking account of an influence of disturbance due to an auxiliary device of the vehicle that is a load of said driving source.

23. The driving system control device according to claim 13, wherein said requested output calculation means (2010) includes means for calculating information for controlling at least two manipulation amounts, differing in response, to control said driving source.

24. The driving system control device according to any of claims 13-23, wherein said driving source is at least one of an engine and a driving motor.